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EXAMINER	
BELYAVSKYI, MICHAIL A	

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/658,621	TAYLOR-PAPADIMITRIOU ET AL	
	Examiner	Art Unit	
	Michail A Belyavskyi	1644	

-- The MAILING DATE of this communication appears on the c ver sheet with the correspondence address --

P ri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33 and 35-37* is/are pending in the application.

4a) Of the above claim(s) *4 –16 , 19 and 23-33,35-36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2, 3, 17, 18, 20-22 and 37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

RESPONSE TO APPLICANT'S AMENDMENT

1. Applicant's amendment, filed 09/02/03 is acknowledged.

Claims 1-33 and 35-37 are pending.

2. Claims 3 ((a – e) and (g)), 4 –16 , 19 and 23-33, 35-36 stand withdrawn from further consideration by the Examiner, 37 C.F.R. § 1.142(b) as being drawn to a nonelected invention.

Claims 1-2, 3 (f), 17, 18, 20-22 and 37 read on SEQ ID NO:26 are under consideration in the instant application

In view of the amendment, filed 09/02/03 the following rejections and objection remain:

3. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code on page 29, second paragraph. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01 for the same reasons set forth in the previous Office Action, mailed 06/03/03

Applicant's arguments, filed 09/02/03 have been fully considered, but have not been found convincing.

Applicant asserted that the paragraph containing the hyperlinks has been amended.

Contrary to Applicants assertion, the amended disclosure still contained executable URL addresses.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112.
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17 and 18, stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for the same reasons set forth in the previous Office Action, mailed 06/03/03

Applicant's arguments, filed 09/02/03 have been fully considered, but have not been found convincing.

Applicant asserted that claim 17 has been amended.

The amended Claim 17 is indefinite and ambiguous in the recitation of " a composition comprising a polypetide of claim 1 an analogue thereof or a combination of two or more different said compounds." It is unclear what Applicant mean by the phrase "two or more different said compounds". The base claim 1 only recites a polypeptide. What other or more "different said compound" Applicant means?

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 17, 18, 20-22 and 37 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a polypeptide consisting of SEQ ID NOs: 3 to 33 and 65 and 66 , does not reasonably provide enablement for a: (i) any polypeptide comprising at least one amino acid sequence of at most 20 and at least 7 consecutive amino acid defined in SEQ ID NO: 1, as recited in claim 1; or (ii) any polypeptide comprising SEQ ID NOs: 3 to 33 and 65 and 66 , as recited in claim 2 or 3; or (iii) any composition, or any diagnostical composition or any vaccine or any kit comprising any polypeptide of claim 1, an analogue thereof, as recited in claims 17, 20, 21 and 37 accordingly ; or (iv) any vaccine comprising any polypeptide of claim 1 or an analogue of any polypeptide of claim 1, as recited in claim 21. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims for the same reasons set forth in the previous Office Action, mailed 06/03/03.

Applicant's arguments, filed 09/02/03 have been fully considered, but have not been found convincing.

Applicant asserted that : (i) it is clear that the scope of the invention is polypeptides containing MHC-1 glycoprotein binding sequences of 7-20 sequential amino acids derived from SEQ ID NO:1; (ii) it is appropriate use of the transition phrase 'comprising"; (iii) the specification provides working examples of a screening method to identify suitable polypeptides within the claim genus; (iv) in the example 6, vaccines comprising polypeptides that has been identified according to the methods taught by the specification demonstrated a protective effect in an art accepted mouse model of tumor growth and (v) even if certain polypeptides described in claim 1 were not operative as a vaccine, skilled practitioner would know how to interpret routine preliminary screens of polypeptide and to proceed with such further screening to identify functional vaccine.

Contrary to Applicants assertion, as was stated in the previous Office Action, Applicant discloses a polypeptide comprising SEQ ID NO: 1 (495 residues) and a polypeptide consisting of amino acid residues of SEQ ID NOs: 3 to 33 and 65 and 66 in the instant specification , wherein said polypeptide binding at least one MHC-I glycoprotein.(see page 7 in particular). Applicant has not provided sufficient biochemical information (e.g. molecular weight, amino acid composition, N-terminal sequence, etc.) that distinctly identifies "any analogs" or any polypeptide comprising sequences of 7-20 sequential amino acids derived from SEQ ID NO:1 other than polypeptide consisting of amino acid residues of SEQ ID NOs: 3 to 33 and 65 and 66 that are capable of binding at least one MHC-I glycoprotein.

It is noted that Applicant define the function of the disclosed polypeptide, i.e. the ability to bind at least one MHC-I glycoprotein. However, these do not obviate the issues of enablement rejection set forth in previous Office Action, mailed 06/03/03. Applicant is relying upon certain biological activities and the disclosure of a limited species to support an entire genus. The claims as written encompass a broad genus of polypeptides with an unlimited number of possibilities with regard to the length of the polypeptide sequence. Further, the enablement issues of making the protein still remain because the specification does not teach and provide sufficient guidance as to which amino acid of 7-20 sequential amino acids derived from SEQ ID NO:1 or an analog thereof would have been altered such that the resultant polypeptide would have retained the function of binding at least one MHC-I glycoprotein. For instance, the length of the peptide is important for binding to MHC-I glycoprotein, HLA (along with the presence of anchor (or "motif") amino acid residues present within the peptide). The peptides that bind to class I molecules have a predominant length. A primary factor for this is that amino acid residues at the amino- and carboxy-termini of peptides binding to class I molecules interact with conserved amino acid residues in pockets ("A","F") located at opposite ends of the binding groove of the class I molecule, giving rise to a common orientation of the peptides in the binding site (Engelhard, Curr Opin Immunol. 6(1):13-23, 1994, at page 14, column 1, lines 16-27.) Thus, the amino acid residues at the peptides' termini make a network of hydrogen bonds with conserved residues on the sides and bottom of the peptide binding groove of class I molecules. These interactions are important for holding the peptides in the binding groove and for stabilizing the complex (Guo, et al, Nature. 360(6402):364-366, 1992, at page 366, column 1 lines 1-10.) "...the preferred length (of the peptide) is determined by the minimum amount of peptide required to span the center of the binding site and optimize the interactions at the ends." (Engelhard at page 14, column 1, lines 23-27.) The minimum amount of peptide required to span the binding groove and make favorable contacts with their N-and C-termini may be dependent upon the sequence of the peptide itself since different amino acid residues have different physicochemical properties, and may be dependent upon the identity of the additional amino acids, since these residues may make a negative contribution to binding. Accordingly, there is a high level of unpredictability in designing/selecting longer sequences that would still maintain binding function, and applicant does not provide direction or guidance to do Moreover, Applicant himself acknowledge that it is not possible to predict which protein will enter the antigen processing pathway, which fragments will be produced, or which fragment will bind to MHC-I glycoprotein. Additionally it is not possible to predict which fragments T cell

will recognize and whether the T cell which recognize the fragment will be protective (see page 2, third paragraph in particular).

Since the instant fact pattern fails to indicate that representative number of structurally related compounds is disclosed, the artisan would not know the identity of a reasonable number of representative compounds falling within the scope of the instant claims and consequently would not know how to make them. An assay for *finding* (screening) a product is not equivalent to a positive recitation of *how to make* a product.

Therefore, absent the ability to predict which of these peptides would function as claimed, and given the lack of data on regions critical for activity, for one of skill in the art to practice the invention as claimed would require a level of experimentation that is excessive and undue.

It is recognized in the prior art that the function of a protein depends on the sequence of its amino acids in a certain pattern, conformation of the protein due to the amino acid sequence and the functional properties of the different parts of the protein. The specification does not teach which changes in amino acid of 7-20 sequential amino acids derived from SEQ ID NO:1 or an analog thereof would not alter all the activities of the peptide. Therefore, the specification fails to provide sufficient guidance as to which core structure of amino acid of 7-20 sequential amino acids derived from SEQ ID NO:1 or an analog thereof is essential for maintain its biological activity and which changes can be made in the structure of amino acid of 7-20 sequential amino acids derived from SEQ ID NO:1 or an analog thereof and still maintained the same function.

Since the amino acid sequence of a polypeptide determines its structure and functional properties, predictability of which changes can be tolerated in a polypeptide's amino acid sequence and still retain similar functionality (e.g. binding at least one MHC-I glycoprotein) requires a knowledge of, and guidance with regard to, which amino acids in the polypeptide's sequence, if any, are tolerant of modification and which are conserved (i.e. expectedly intolerant to modification) and detailed knowledge of the ways in which a polypeptide's structure relates to it's functional usefulness. However, the problem of predicting polypeptide structure from mere sequence data of a single amino acid sequence and in turn utilizing predicted structural determinations to ascertain functional aspects the peptides and finally, what changes can be tolerated with respect thereto is complex and well outside the realm of routing experimentation.

Therefore, structurally unrelated any polypeptide comprising at least one amino acid sequence of at most 20 and at least 7 consecutive amino acid defined in SEQ ID NO: 1, as recited in claim 1; or (ii) any polypeptide comprising SEQ ID NOs: 3 to 33 and 65 and 66 , as recited in claim 2 or 3; or (iii) any composition, or any diagnostical composition or any vaccine or any kit comprising any polypeptide of claim 1, an analogue thereof, as recited in claims 17, 20, 21 and 37 accordingly ; or (iv) any vaccine comprising any polypeptide of claim 1 or an analogue of any polypeptide of claim 1, as recited in claim 21encompassed by the claimed invention other than "a polypeptide comprising SEQ ID NO: 1 (495 residues) and a polypeptide consisting of amino acid residues of SEQ ID NOs: 3 to 33 and 65 and 66" would be expected to have greater differences in their activities.

With regard to the issue of appropriate use of the transition phrase " comprising". The examiner agrees that "comprising" is a term of art used in the claim language. However, the issue raised in the previous Office Action was that "comprising" is considered open-ended claim language and includes amino acid residues outside of the specified peptide. Therefore, a peptide "comprising" at least one amino acid sequence of at most 20 and at least 7 consecutive amino acid defined in SEQ ID NO: 1 as recited in claim 1, or (ii) any polypeptide comprising SEQ ID NOs: 3 to 33 and 65 and 66 , as recited in claim 2 or 3; or (iii) any composition, or any diagnostical composition or any vaccine or any kit comprising any polypeptide of claim 1, as recited in claims 17, 20, 21 and 37 accordingly; or (iv) any vaccine comprising an analogue of any polypeptide of claim 1, as recited in claim 21 includes an unlimited number of amino acid sequences "comprising" an unlimited number of polypeptides and analogue. The disclosure of SEQ ID NOS: 2, 3 to 33 and 65 and 66 cannot support the entire genus of any polypeptide comprising at least one amino acid sequence of at most 20 and at least 7 consecutive amino acid defined in SEQ ID NO: 1, as recited in claim 1; or (ii) any polypeptide comprising SEQ ID NOs: 3 to 33 and 65 and 66 , as recited in claim 2; or (iii) any vaccine comprising an analogue of any polypeptide of claim 1, as recited in claim 21, as part of their sequence that are capable to bind at least one MHC-I glycoprotein. A myriad of peptides is encompassed by the claims.

With regards to the issue that " in the example 6, vaccines comprising polypeptides that has been identified according to the methods taught by the specification demonstrated a protective effect in an art accepted mouse model of tumor growth".

Contrary to Applicants assertion, a close examination of the example 6 reveals that there was no protection effect of any vaccine comprising polypeptide of 7-20 sequential amino acids derived from SEQ ID NO:1 or an analogue thereof. For example, in experiment I MUC1 $^{460\text{-}468}$ and MUC $^{13\text{-}21}$ have little or no effect at al (see page 45 in particular). Moreover, Applicant himself acknowledge that not certain polypeptide described in Claim 1 were not operative as vaccine (see Applicant Response filed 09/02/03). At most, the example 6 reveals that very specific polypeptide disclosed in Experiment 1-3 (overlapping pages 45-46) were able to treat not protect specific type of melanoma.

With regards to the issue that "skilled practitioner would know how to interpret routine preliminary screens of polypeptide and to proceed with such further screening to identify functional vaccine".

Contrary to Applicants assertion , since the instant fact pattern fails to indicate that representative number of structurally related compounds is disclosed, the artisan would not know the identity of a reasonable number of representative compounds falling within the scope of the instant claims and consequently would not know how to make them. An assay for *finding* (screening) a product is not equivalent to a positive recitation of *how to make* a product.

Thus, Applicant has not provided sufficient guidance to enable one skill in the art to make and/or use claimed: any polypeptide comprising at least one amino acid sequence of at most 20 and at least 7 consecutive amino acid defined in SEQ ID NO: 1, as recited in claim 1; or (ii) any polypeptide comprising SEQ ID NOs: 3 to 33 and 65 and 66 , as recited in claim 2 or 3; or (iii) any composition, or any diagnostical composition or any vaccine or any kit comprising any polypeptide of claim 1, an analogue thereof, as recited in claims 17, 20, 21 and 37 accordingly ; or (iv) any vaccine comprising any polypeptide of claim 1 or an analogue of any polypeptide of claim 1, as recited in claim 21 in manner reasonably correlated with the scope of the claims. The scope of the claims must bear a reasonable correlation with the scope of enablement. *In re Fisher*, 166 USPQ 18 (CCPA 1970) indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute.

In view of the quantity of experimentation necessary, the unpredictability of the art, the lack of sufficient guidance in the specification, the limited working examples, and the limited amount of direction provided given the breadth of the claims, it would take undue trials and errors to practice the claimed invention.

7 . Claims 1-3, 17-18, 20-22 and 37 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention same reasons set forth in the previous Office Action, mailed 06/03/03

Applicant's arguments, filed 09/02/03 have been fully considered, but have not been found convincing

Applicant asserts that the specification describes a large number of representative species define by function that is more than sufficiently described the claimed genus.

Contrary to Applicants assertion, a description of what a material does rather than of what it is, usually does not suffice. The patent does not more than describe the desired function of the compound called for and contains no information by which a person of ordinary skill in the art would understand that the inventors possessed the claimed invention. At best, it simply indicates that one should run tests on a wide spectrum of compounds in the hope that at least one of them will work. A description of a protein by functional language in the absence of a structure is not considered sufficient to show possession of the claimed invention.. See Fiers, 984 F.2d at 1169-71, 25 USPQ2D at 1605-06. It is only a definition of a useful result rather than a definition of what achieves that result. Many species may achieve that result. The definition requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See *In re Wilder*, 736 /f.2d 1516, 1521, 22 USPQ 369,

372-73 (Fed. Cir. 1984) affirming the rejection because the specification does "little more than outline[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate.") Accordingly, naming a type of material generally known to exist, in the absence of knowledge as to what the material consists of (e.g. structural feature), is not a description of that material. The claimed composition of matter defined only by its biological activity or function is insufficient to satisfy 35 U.S.C. 112, first paragraph.

Applicant is in possession of : a polypeptide consisting of SEQ ID NOs: 3 to 33 and 65 and 66.

Applicant is not in possession of : (i) any polypeptide comprising at least one amino acid sequence of at most 20 and at least 7 consecutive amino acid defined in SEQ ID NO: 1, as recited in claim 1; or (ii) any polypeptide comprising SEQ ID NOs: 3 to 33 and 65 and 66 , as recited in claim 2 or 3; or (iii) any composition, or any diagnostical composition or any vaccine or any kit comprising any polypeptide of claim 1, an analogue thereof, as recited in claims 17, 20, 21 and 37 accordingly ; or (iv) any vaccine comprising any polypeptide of claim 1 or an analogue of any polypeptide of claim 1, as recited in claim 21.
Applicant has disclosed a limited number of species; therefore, the skilled artisan cannot envision all the contemplated amino acid sequence possibilities recited in the instant claims. Consequently, conception in either case cannot be achieved until a representative description of the structural and functional properties of the claimed invention has occurred, regardless of the complexity or simplicity of the method. Adequate written description requires more than a mere statement that it is part of the invention. The sequences themselves are required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993).

A description of a genus of polypeptide sequences may be achieved by means of a recitation of a representative number of polypeptide sequences, defined by amino acid sequence, falling within the scope of the genus, or of a recitation of structural features common to the genus, which features constitute a substantial portion of the genus. Regents of the University of California v. Eli Lilly&Co., 119F3d 1559, 1569, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the written description inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.). Consequently, Applicant was not in possession of the instant claimed invention. See University of California v. Eli Lilly and Co. 43 USPQ2d 1398.
Applicant is directed to the Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 17, 18, 20-22 stand rejected under 35 U.S.C. 102(b) as being anticipated by Wrescshner (WO 9603502-A2) as evidenced by Rammensee et al. (Immunogenetics. 1995, 41, 178-228) for the same reasons set forth in the previous Office Action, mailed 06/03/03.

Applicant's arguments, filed 09/02/03 have been fully considered, but have not been found convincing.

Applicant asserts that: "although the sequence of SEQ ID NO:26 might be found within MUC1 proteins disclosed by WO'502, it will be noted that all polypeptides taught by WO'502 are larger proteins or substantial fragments of larger proteins". All such polypeptides of WO'502 have greater than twenty consecutive amino acid residues of SEQ ID NO:1. Therefore WO'502 does not teach a polypeptide comprising SEQ ID NO:26.

Contrary to Applicants assertion, the word "comprising" is considered open-ended claim language and will open the claim to read on polypeptide taught by WO'502.

WO '502 teach a mucin-derived polypeptides and composition and vaccines comprising said polypeptides for the diagnosis, imaging and therapy of human cancer polypeptide (see entire document, Abstract in particular). WO '502 teach a polypeptide of SEQ ID NO 17, that is 100 % identical to the claimed SEQ ID NO:26 (see sequence alignment in particular). WO '502 teach a functional derivative of mucin-derived proteins of various length (see page 5 in particular). WO '502 teach a pharmaceutical composition comprising said polypeptide (see page 12 in particular.) WO '502 teach a cell culture transformed with a vector, comprising a polynucleotide encoding said proteins (see page 20 in particular). WO '502 teach a vaccine comprising said polypeptide and adjuvant which stimulate a MHC class I response. (see pages 45 –47 in particular).

The recitation that "said polypeptide binding at least one MHC I glycoproptein", as claimed in claim 1 is considered an inherent property of the reference polypeptide as evidence by Rammensee et al . Rammensee et al . teach a polypeptide motif that is essential for the said polypeptide to bind with MHC-I glycoprotein , (see entire document, table 2, page 192 in particular). Rammensee et al . teach that for 9 mers for example such anchor motif (2 in most cases) should contain amino acid 'S" at position 2 and amino acid "Y" at position 9.

It is noted that the referenced polypeptide contained "S" at position 2 and "Y" at position "9" (see sequence alignment). Since the office does not have a laboratory to test the reference polypeptide, it is applicant's burden to show that the reference polypeptide do not bind to at least one MHC-I glycoprotein as recited in the claims. See *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Marosi*, 218 USPQ 289, 292-293 (Fed. Cir. 1983); *In re Fitzgerald et al.*, 205 USPQ 594 (CCPA 1980).

10. It is notes that the rejection under 35 U.S.C. 102(a) as being anticipated by WO'309 as evidenced by Rammensee et al. (Immunogenetics. 1995, 41, 178-228) has been withdrawn due to the amendment of claim 1. However, this rejection will be re-installed if **a new matter** (at least 7 consecutive amino acids of SEQ ID NO:1) has been introduced by said amendment.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

12. Claim 37 stand rejected under 35 U.S.C. 103(a) as being obvious over Wrescshner (WO 9603502-A2) in view of Zuk et al. (U.S. Patent No. 4,281,061) for the same reasons set forth in the previous Office Action, mailed 06/03/03.

Applicant's arguments, filed 09/02/03 have been fully considered, but have not been found convincing.

Applicant asserted that since WO'502 is not the prior art, the combination of references do not teach or suggest every elements of the claimed invention.

Contrary to Applicants assertion, as has been discussed, supra, it is the examiner position that WO'502 is the prior art.

The teaching of WO'502 has been discussed, supra.

WO'502 does not teach a kit comprising a polypeptide and adjuvant.

US Paten '061 teaches that reagents of the pharmaceutical compositions can be provided as kits as a matter of convenience , optimization and economy of the users (see col 22, line 62 - col 23, line 4 in particular).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teaching of US Paten '061 to those of WO '502 or WO '309 to obtain a claimed kit comprising a polypeptide adjuvant.

One of ordinary skill in the art at the time the invention was made would have been motivated to do so, because assemble the reagents in a kit format a matter of convenience , optimization and economy of the users as taught by US Paten '061 and the components of the pharmaceutical compositions taught by WO '502 or WO '309 can be in a pack or a kit for convenience and economy.

From the combined teaching of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention.

Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

The following new ground of rejection is necessitated by the amendment filed 09/02/03.

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14 . Claims 1-3, 17-18, 20-22 and 37 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **This is a New Matter rejection.**

"A polypeptide comprising at least one amino acid sequence of the most 20 and at least 7 consecutive amino acids" claimed in claim 1 represent a departure from the specification. The passages pointed by the applicant only disclosed a general knowledge in the art that a full-sized protein or glycoprotein antigen is digested into shorter antigenic polypeptides (of about 7 to 13 amino acids). This general knowledge does not provide a clear support for claimed "A polypeptide comprising at least one amino acid sequence of the most 20 and at least 7 consecutive amino acids defined in SEQ ID NO:1". The specification and the claims as originally field only support " A polypeptide comprising at least one amino acid sequence of the most 20 consecutive amino acids ..." .

15. No claim is allowed

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michail Belyavskyi whose telephone number is (703) 308-4232. The examiner can normally be reached Monday through Friday from 9:00 AM to 5:30 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-3014.

Michail Belyavskyi, Ph.D.
Patent Examiner
Technology Center 1600
November 17, 2003.

Christina Chan

CHRISTINA CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600